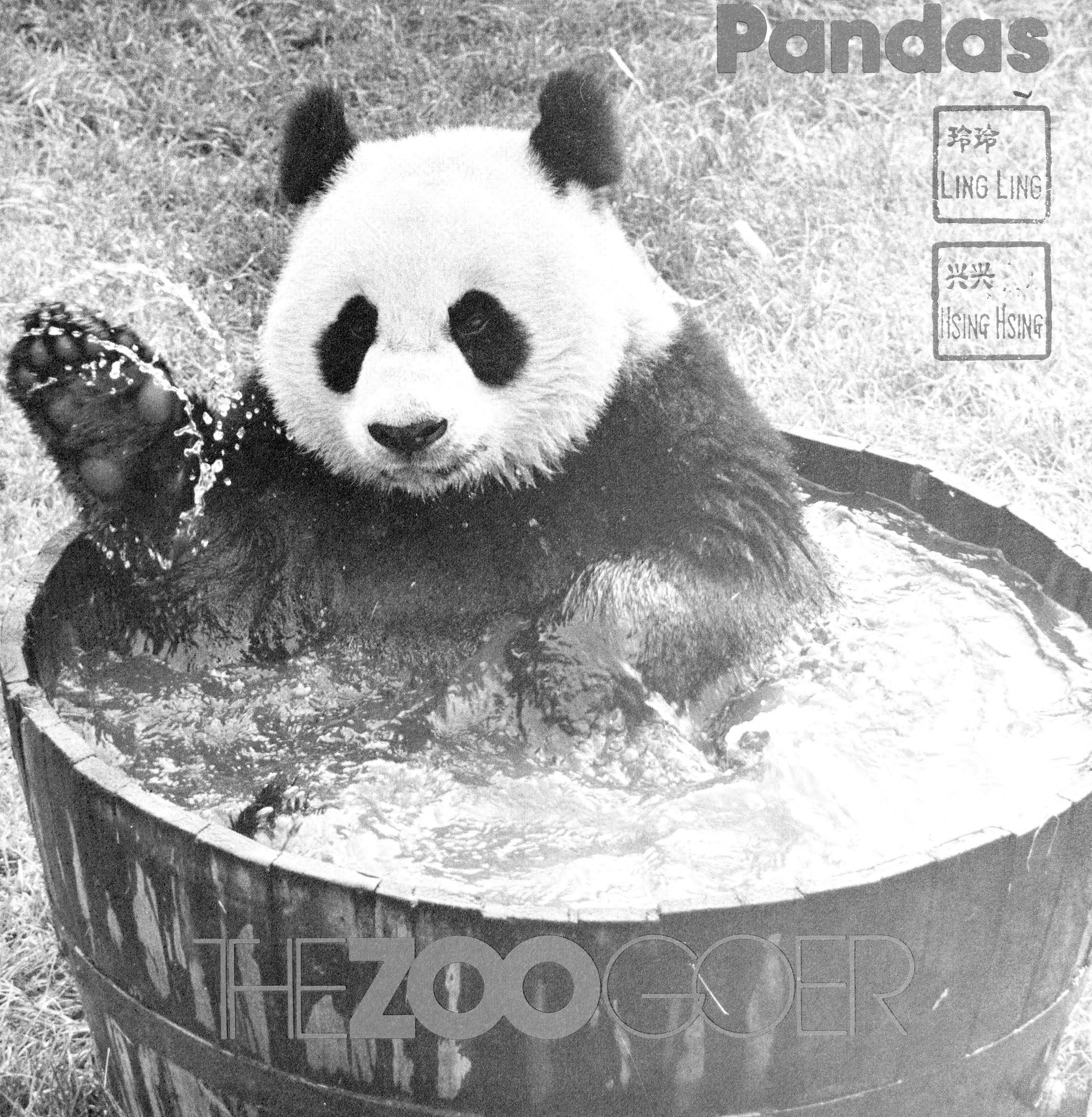
Pandas

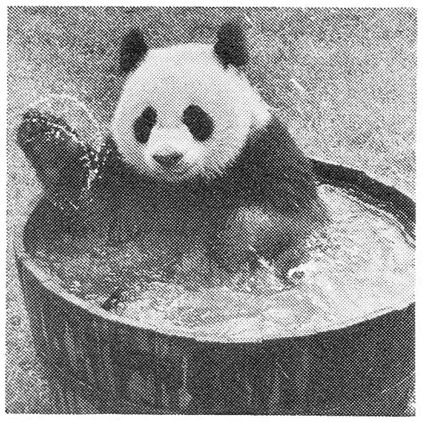


THE ZOOGOER

volume4, number 6

contents

3 Pandas at NZP
11 Panda Lifestyle
16 Panda Poses
19 Pandas and Man
25 Lesser Pandas
30 BookNews
31 Wildlife Print



Front Cover: Beating the summer heat, Ling-Ling enjoys a cooling dip in her outdoor tub during her first year at the National Zoo.

Back Cover: Only close relative of the giant panda, the lesser panda is the star of a remarkably successful Zoo breeding program.

Design-Production:
Monica Johansen Morgan

Photographs on front cover, pp. 15, 25, & 29 by Smithsonian Institution Photo Services; back cover, pp. 3,5,6,7,8,16D,18,26, & 28 by Jan Skrentny; pp.4, 16A, 15C, & 23 by Dr. Theodore H.Reed; pp. 9 & 13 by Francie Schroeder, NZP; pp. 10 & 16D by Max Hirsh field, NZP; p. 11 by Jordan Ross, NZP; p.19 by Donna K. Grosvenor, © National Geographic Society; p. 22 courtesy of Chicago Zoological Society, Brookfield Zoo; p. 27 James B. Armstrong. Map on p. 12 by Jordan Ross; drawing on p. 14 by Kathy Shea.

Friends of the National Zoo

is a non-profit organization of individuals and families who are interested in supporting Zoo education, research, and conservation.

As a FONZ, you and your family receive many benefits—publications, discount privileges, and invitations to special programs and activities—to make your zoogoing more enjoyable and educational.

THE ZOOGOER is published bi-monthly and copyrighted © by Friends of the National Zoo, c/o National Zoological Park, Washington, DC 20009, second class mailing permit approved at the Washington, DC rate in the United States $3 a year (of annual dues).

Zoo Staff

Dr. Theodore H. Reed, *Director*
Mr. Edward Kohn, *Deputy Director*
Mr. John Perry, *Conservationist*

Office Chiefs

Mr. Jaren Horsley, *Animal Management*
Dr. Christen Wemmer, *Conservation & Research Center*
Dr. Mitchell Bush, *Animal Health*
Dr. Richard Montali, *Pathology*
Dr. John Eisenberg, *Zoological Research*
Mr. Emmanuel Petrella, *Facilities Management*
Mr. Robert Engle, *Construction Management*
Mr. Joseph Reed, *Management Services*
Mr. Robert Mulcahy, *Graphics & Exhibits*
Ms. Judy White, *Education & Information*
Cpt. Samuel Middleton, *NZP Police*

Pandas at NZP

The word was out—"The National Zoo is going to get a pair of giant pandas! giant pandas!!" While the news brought joy to the public, it brought mixed emotion to the Zoo staff. Where in the world were we going to house them? What care did they require? What impact would they have on visitation?

The Zoo had to answer these questions—and fast! Dr. Reed, the Director, was flying to China to bring the pandas back. Time was very short.

Few realize the herculean efforts made by the National Zoo to prepare for the pandas. To begin with, an area had to be found to exhibit them. No small task for a pair of animals which were not only politically important, but extremely appealing to both the zoo world and the public. After much debate, it was finally decided to use the existing Delicate Hoofed Stock Building. Simple? Not really! The building housed two species of hoofed stock: a pair of white rhinos and a herd of rare bongos. What were we to do with these animals? It was decided to put the bongos in a paddock in the deer area which would also require renovation. The bongos were moved literally as the walls of their former home were falling for the panda renovation.

The white rhinos were another problem. They could not be relocated that simply. Fortunately, previous arrangements had been made to send them to the San Diego Zoo, but a firm shipping date had not been set. Now it was! The rhinos had to be shipped in 14 days or else. As if the time pressure was not enough, the male rhino required endless coaxing before he would allow himself to be crated.

While all this was happening, other discussions were taking place. Having never cared for giant pandas, we had to learn quickly. The person who would be in charge of the pandas flew to England to spend a few weeks picking the minds of the London Zoo's panda keepers. Books and periodicals were researched for data. A former panda keeper at Chicago's Brookfield Zoo was flown in for consultation.

The data was compiled in a folder entitled *Everything You Always Wanted to Know about Giant Pandas: And You'd Better Know It.*

Finally the big day came. Miracu-

Packaged in individual crates for their trip to Washington, D.C., the pandas are delivered to the Peking airport by Chinese officials.

Previous page: Munching bamboo in a favorite panda position, Hsing-Hsing sits upright, legs sprawled. Powerful molars and a muscular stomach enable pandas to eat pounds of bamboo daily.

lously, all was ready for the pandas, a gift from the People's Republic of China to the people of the United States. Were the pandas ready for us?

The pandas were to arrive April 16, 1972 on an Air Force cargo plane accompanied by the Director of the National Zoo, and a group of Chinese panda experts who were to oversee the initial adjustment period.

The pandas landed at Maryland's Andrews Air Force Base in the early hours of the morning and then were transported by special truck to our new Panda House. Excitement was sky-high. Giant pandas at the National Zoo! Fantastic!! Although many zoos made requests to the White House, the National Zoo had always been the traditional recipient for gifts from foreign governments.

Ice is nice on a hot summer day. It's also fun to play with as Hsing-Hsing discovers.

Unloading the pandas took place among a small crowd of zoo staff. The pandas had been shipped in specially constructed crates lacquered light green. At the first sight of two black noses poking through the crate bars, we began to realize what special charisma these fantastic animals possessed.

Both pandas were young. The male, Hsing-Hsing (pronounced Shing-Shing and meaning bright star) was approximately 1 year old. The female, Ling-Ling (a pet name for Chinese girls and referring to the tinkling of bells worn on girls' wrists) was approximately 1½ years old. Both had been born in the wild.

The animals were extremely gentle and allowed themselves to be petted.

Before placing them in their new enclosure, they were weighed. Hsing-Hsing weighed 74 pounds and Ling-Ling 136 pounds. This weight difference would continue for another eighteen months when Hsing-Hsing finally overtook and passed Ling-Ling in weight. By late 1975, Hsing-Hsing weighed 285 pounds and Ling-Ling 260 pounds.

Each panda occupied separate indoor quarters with private sleeping dens. The temperatures of their enclosures was kept at around 50°F to match the climate of their natural habitat. Spacious outdoor yards allow them to go outside on cool (below 70°) days.

Now came time to face the problems of feeding, general care, and the public. The Chinese provided us with a diet on which the pandas had thrived in Peking. The Chinese diet was slowly revised or "Americanized" over the next few months until they were eating and thriving on the following: 3 pounds of apples; 3 pounds of carrots; 3 pounds of cooked sweet potatoes; a rice gruel consisting of 3 cups of cooked rice and 2 cups of water; 1 teaspoon of vidaylin, a multivitamin; 2 tablespoons of calcium supplement; ¼ can of Feline diet; 1 large size milk bone; and 10 pounds of bamboo. That diet was fed each animal in the morning and afternoon with a between meal snack of 3 pounds of apples and carrots.

One of our greatest problems was providing a steady, adequate source of bamboo. Since each panda consumed 20 pounds a day, it was obvious that the Zoo's reserve would be quickly depleted. Fortunately, the Washington area residents came through with flying colors. Calls came in by the hundreds offering bamboo for the pandas. A special file was put together of local bamboo sources. After 3½ years, we are still receiving donations. Not only do the pandas love bamboo, but it is extremely important for their diet. Bamboo provides roughage needed for proper digestion and stool consistency.

Health was another serious matter. Innoculation for distemper had to be given. A tricky and risky undertaking since we do not know to which diseases giant pandas were susceptible. Because of this uncertainty, vaccination for both canine and feline distemper was given. Both animals are given annual boosters for constant protection. In addition, routine stool examinations are run. If internal parasites are seen, medication is provided through feed.

The keepers are constantly on the alert for any change in normal behavior which could indicate illness. Should this occur the veterinarian is alerted. Fortunately, neither animal has experienced any major illness.

Panda keeper, David Bryan, prepares the twice daily panda meal of bamboo, apples, carrots, cooked sweet potatoes, rice gruel, Feline diet, milk bone, and vitamins. In between the 20-pound meals comes a three-pound snack of apples and carrots.

Hsing-Hsing picks a favorite place—his dirt-filled tub—to gnaw on his favorite food—bamboo. Some of the bamboo is grown right on the Zoo grounds.

Regular booster shots given by the Zoo veterinarian help keep the pandas in good health.

There have been some minor bouts with gastro-intestinal upsets and colds, but they have been cured.

With the pandas finally settled into their enclosures, the Zoo faced it's next major problem—the public. Not only were these the first giant pandas to be exhibited at the National Zoo, but they were the first to be seen in the United States in 20 years. We expected large crowds, but we were unprepared for what followed. Literally thousands of people flocked to the newly opened Panda House every day. The lines stretched hundreds of yards and remained that way all day, rain or shine. For the pandas' well-being, they were allowed access both to the exhibit area and their sleeping dens. As luck would have it, they often spent a large part of their time in their dens hidden from public view. The police had the unpleasant job of moving the lines through the building. At times it was chaotic, but there was no choice. Irate visitors complained about driving hundreds of miles to see the pandas and then being led through the building only to see a black and white ball of fur asleep. Fortunately today, with larger enclosures, and publicized feeding times, the public can see either one or both animals without having to wait for hours.

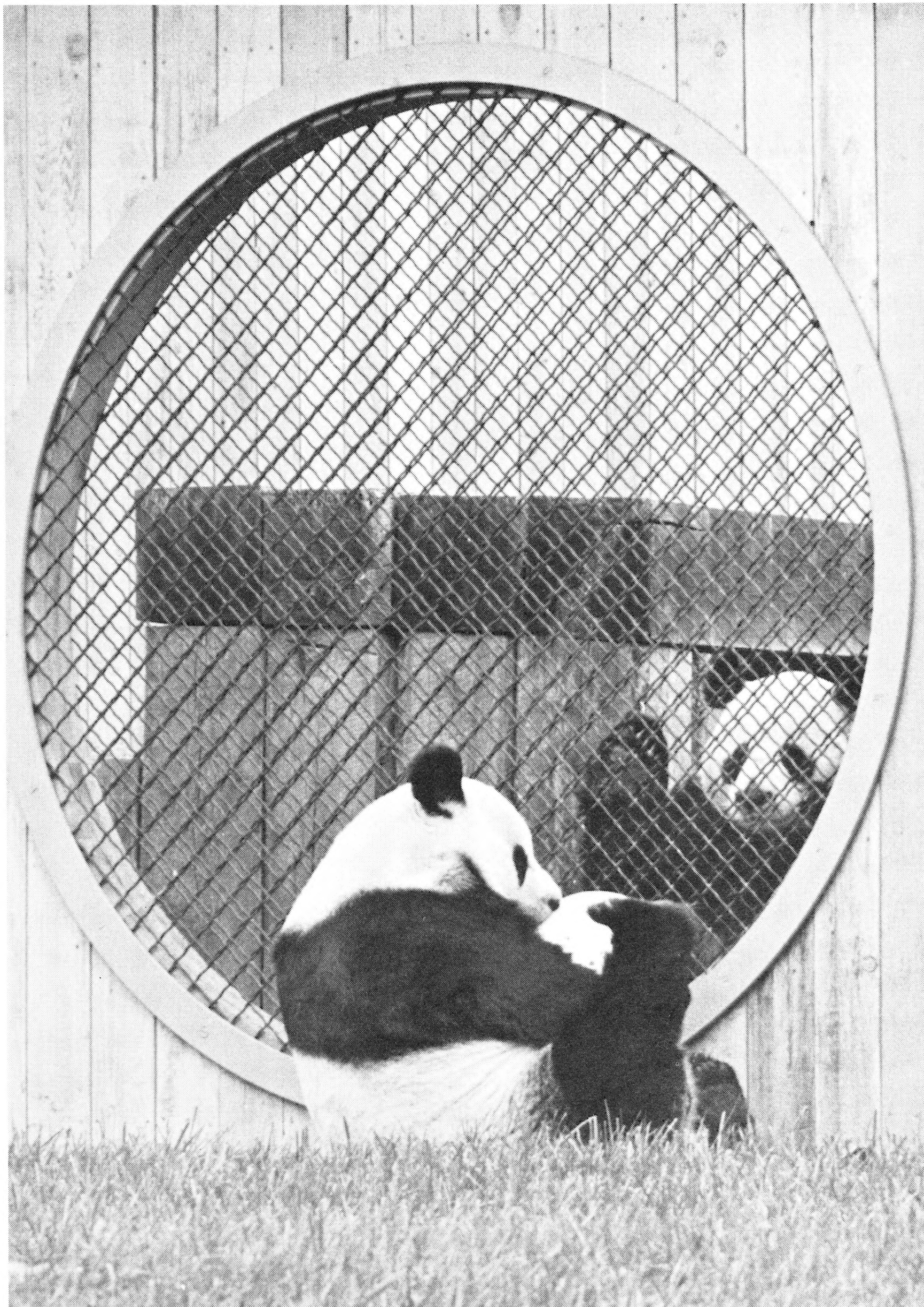
Initially, both pandas were relatively tame, and the keepers would enter to clean their enclosure and occasionally hand feed them. This behavior lasted until a keeper was chased around the indoor enclosure. I believe the keeper's remark at the time was "Man, he ain't playin'." That brought an abrupt end to our going in with both pandas. This behavior was not unexpected, but it was rather sudden. Pandas had been reported in the past as extremely dangerous at approximately 2½ years of age.

There had been recorded attacks on other zoo personnel which resulted in serious injury. Their cuddly appearance unfortunately did not correspond with their disposition as they got older. Today we are still cautious even when playing with them through the fence as both pandas have tried to bite or claw.

One frequently asked question is why do we keep them separated? The answer is not simple. First, the panda in the wild is a solitary animal which only comes together for breeding. Initially, they were not allowed together because the female was larger, and the zoo staff was concerned that she would become dominant causing serious problems later when actual breeding encounters were run. There is a dispute as to when pandas

reach sexual maturity. The Chinese said they could breed at 6 or 7 years, but from our experience it would appear to be much earlier, possibly at 3½ to 4 years. The pandas have two breeding seasons: a primary one in the spring (April-May) and a secondary period in the fall. Our first introduction for breeding took place in the spring of 1973 for two short periods over two days. A second series of introductions took place in April, 1974. Neither resulted in breeding, but the behavior was encouraging. Encounters were also initiated in the spring of 1975 and proved promising. The female was definitely in heat and would actually solicit the male. While Ling-Ling was willing, Hsing-Hsing behaved like a teenager on his first date. The urge was there but not the knowledge. Ling-Ling became understandably upset with Hsing-Hsing's inept fumblings and often became agitated and acted aggressively toward her mate.

A vast amount of data has been gathered on the pandas both on their reproductive and day-to-day behavior. Since very little has been written on the giant panda outside of China, it is imperative that the Zoo staff continue to increase its knowledge of these animals. Scent marking techniques in both the male and female have been described elsewhere; observations at



Good fences make good neighbors especially for pandas which lead solitary lives in the wild except for breeding. The Chinese-styled Moon Gate enables Hsing-Hsing and Ling-Ling to see each other when outdoors.

the National Zoo have added to existing data. Changes, both behavioral and physical, in the male and female before, during, and after estrus have been observed and recorded. This data is invaluable to us in our future attempts at breeding this species.

It is hoped that as additional data is acquired and as more giant pandas are released to Western zoos, such data will be useful in helping other zoos care for these rare animals.

If successful mating and a birth occur, we expect pandamonium all over again. Crowds by the thousands. Frustrated policemen. Jubilant zoo officials. In any case the saga of Ling-Ling and Hsing-Hsing will go on. They will always be a major attraction at the National Zoo and continue to thrill the millions who visit them each year.

William Xanten
Associate Curator, Mammals

In attempts to mate the pandas, the Zoo has put the animals together for short periods during Ling-Ling's estrus cycle. Pandas have two breeding seasons, a primary one in the spring and a secondary one in the fall.

Panda Lifestyle

Despite its colorful history, surprisingly little is known about the life and habits of the giant panda in the wild. No detailed field studies have ever been done. Less than 25 captive pandas have left the Orient and none have ever bred in zoos outside China.

Until recently, experts did not even agree on whether the panda was a bear or raccoon. Anatomically, the giant panda (Ailuropoda melanoleuca or "black-and-white panda foot") is a highly specialized bear. But they are raccoonlike in terms of skull, teeth, stomach, and chromosomes. Bears roar; pandas bleet or cough.

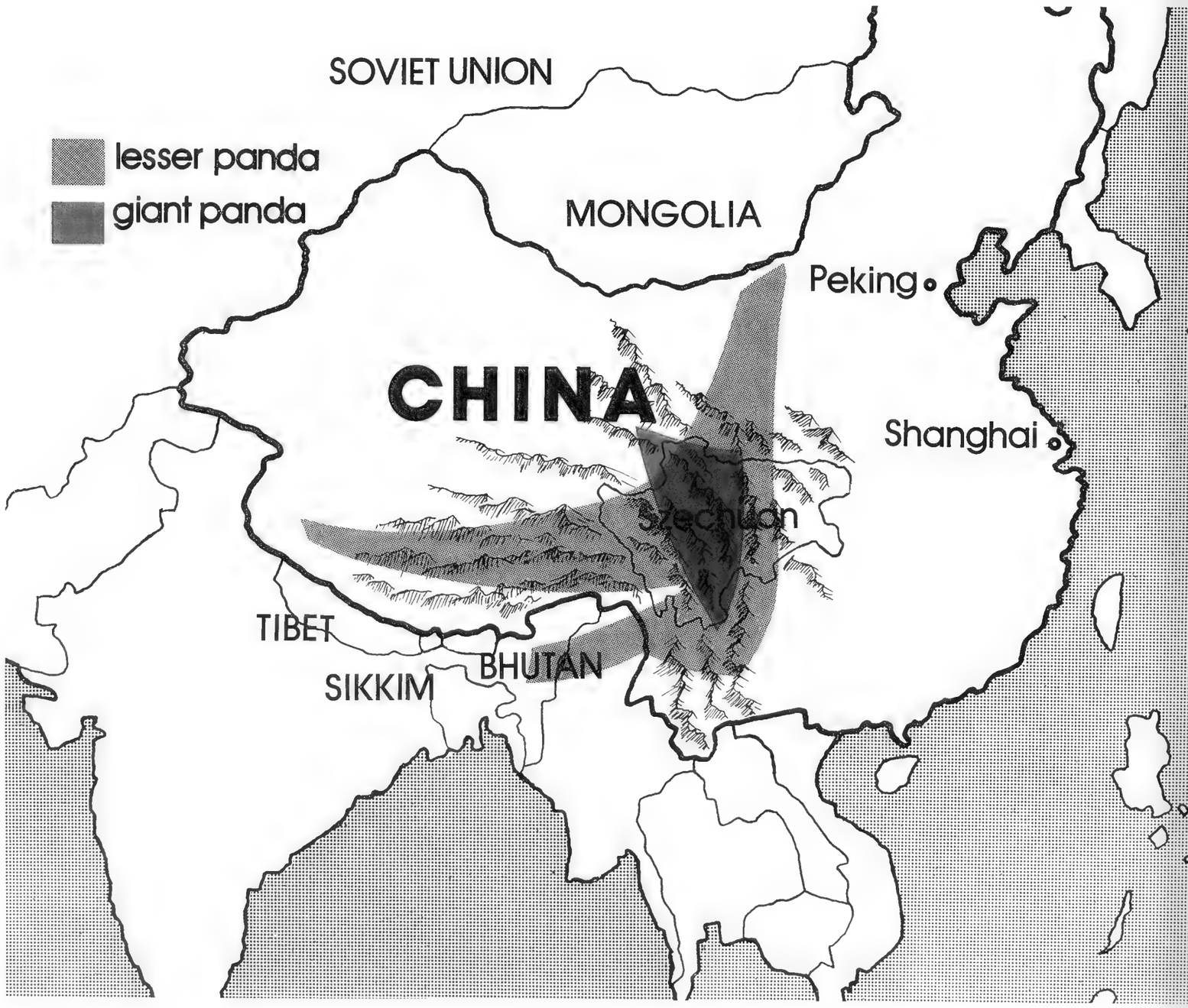
Smithsonian and Chinese zoologists, however, now agree that the giant panda and lesser panda (see page 25) should be assigned a taxonomic family all their own.

The giant panda inhabits a relatively small and remote region in Western China near the Tibetan border. Within its range, the giant panda tends to confine its activities to the coniferous forests and dense bamboo thickets that cover the mountainsides between 5,000 and 10,000 feet above sea level.

Although the provinces of Szechuan and Kansu are at the same southerly latitude as Florida, the high altitude makes the giant panda's homeland inhospitable country to all but a few hardy animals and men. Snow is on the ground from October to May. Summer temperatures rarely go above 50 degrees. The thick and fast-growing bamboo forests are nourished by almost continuous rains. Above the bamboo belts lie vast rhododendron forests. Still further up are alpine meadows and finally, the year-round snows of the mountain peaks. Giant pandas seldom venture into these higher regions or descend to the populated valleys below.

Several other unique mammals share this bamboo belt. One of these is the golden-brown takin, which looks something like a musk-ox. This bovine is so closely associated with the bamboo forests that early hunters took its presence as a sure sign there were giant pandas in the area. The lesser panda is found in giant panda country, although its range includes both lower and higher altitudes than the giant panda's. Another unusual resident is the golden-haired monkey which has ten-to-twelve-inch-long golden fur. There are also leopards, lynxes, and the Himalayan black bear.

Home for the giant panda is the dense bamboo and fir forests that blanket the rugged mountain slopes in remote western China. Total population in the wild has been estimated at up to several thousand.

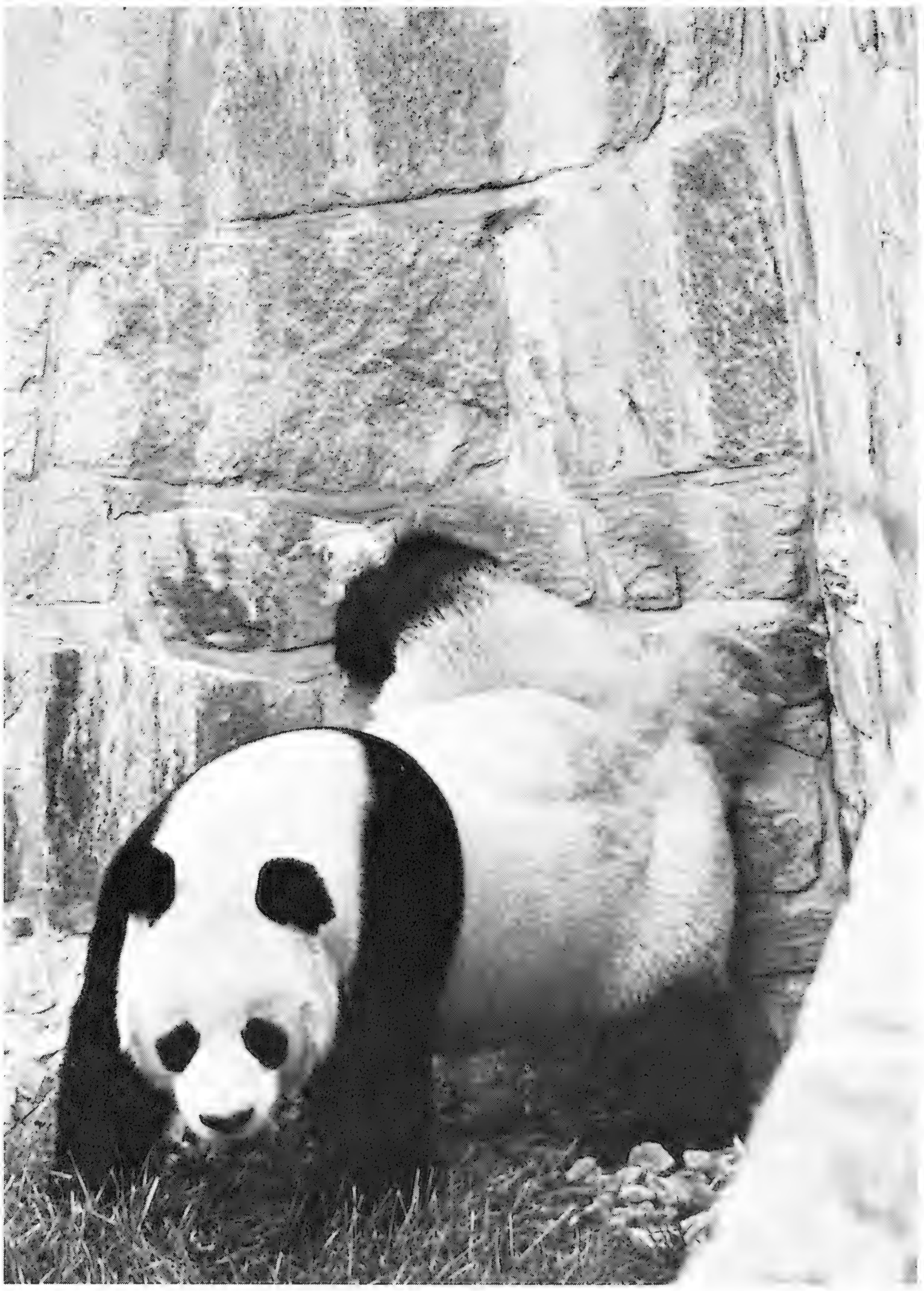


Previous page: Black and white and snow all over, Hsing-Hsing plays in the Washington snow like any child. Pandas come from the colder regions of China where snow is on the ground from October to May.

Adult pandas are solitary. Each one doubtless has an individual home range, but its average size is unknown. One observer suggested a territory of only one square mile, but for such a large (and rare) mammal, this must represent the most frequently used portion of a larger range. Perhaps the larger ranges overlap somewhat, but each panda defends this smaller territory against other pandas and warns them away by marking it with their scent glands.

Giant pandas of both sexes have scent glands under the tail, which they use in territorial marking. Hsing-Hsing uses both his urine and scent glands to mark walls, logs, and other objects in his cage every morning when he first emerges from his den. Sometimes he does a "hand-stand" while marking. His forefeet on the ground, he walks his hind feet up the wall until he is able to press his anogenital region against the wall. Ling-Ling, like other captive females, marks less frequently than the male. However, captive pandas of both sexes increase their scent-marking activity noticeably during the breeding season. In the wild this increased scent-deposition must play a role in helping the solitary adults find one another.

Each panda travels along well-established paths through the bamboo thickets, stopping every hundred yards or so to feed. Observers have noted that the giant panda is most active in feeding around dawn and



Back leg cocked, Hsing-Hsing does in captivity what pandas do in the wild: scent-mark to establish territorial rights.

dusk and sleeps during both the middle of the day and the middle of the night. If so, it may be called crepuscular in its habits, as opposed to diurnal or nocturnal. However, it is more likely that giant pandas are not strictly crepuscular either. Evidence from the National Zoo seems to indicate that —like some other large herbivorous mammals—they are active in the early morning and from dusk to after midnight and sleep during the middle of the day and the latter part of the night. In any event, observers have come across panda sleeping sites where bamboo stalks have been twisted to form a kind of nest. They are also said to hole up in hollow trees or under rock ledges.

Panda trails, panda nests, panda feeding sites, and panda droppings have been found by explorers much more often than pandas themselves. The feeding sites are reported to be particularly easy to find. They consist of areas of no more than one or two square yards that have been cleared of bamboo by the panda. According to one account, the panda bites off 15 to 20 bamboo stalks at each feeding site and piles them up. These stems may be from five to 18 feet tall.

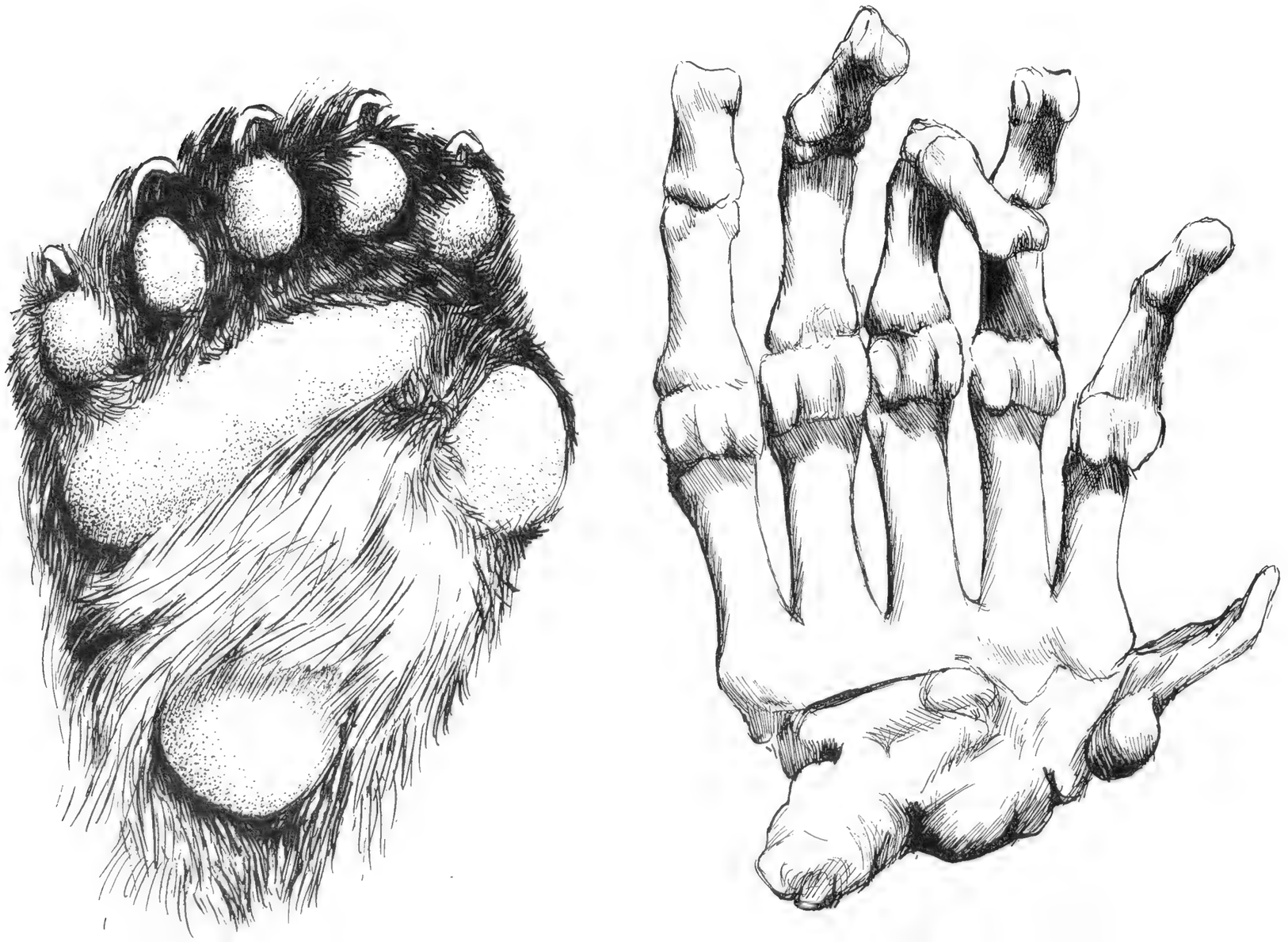
It has been said that the panda eats the middle part of the stalk and rejects both the leaves and the tough bottom. In the wild it may indeed do so, but many young captive specimens (including Hsing-Hsing and Ling-Ling) seem to prefer the leaves.

While feeding, the giant panda lies on its back or sits with its hind legs outstretched in the characteristically slouching seated posture so familiar from zoo pandas. It raises one of the stalks it has broken off to its mouth, gripping it between the palm of the hand and a peculiar elongated wristbone, and quickly strips off the tough outer layers with its teeth. Either the stalk is held straight in front of the mouth and stripped by means of the incisors or it is held slightly to the side, in which case the panda uses its canines and premolars. In either case the outer layer is torn off with a twisting movement of the forepaw and a sideways jerk of the head. A section of the peeled stalk is then biten off, methodically chewed by an up-and-down chomping motion of the jaws, and swallowed.

The stalks are held in a furrow that appears between the wristbone pad and the hairless palm pad when the hand is flexed. One author compares this grasping operation to the way a human being would grasp wearing a "thumbless mitten." But he adds that the panda can be a good deal more dextrous than the comparison would suggest. In zoos, giant pandas have been observed picking up straws and small pieces of food with their forepaws. Hsing-Hsing and Ling-Ling use the forepaws to pick up their metal feed trays by the edge.

Even the youngest and tenderest of bamboo shoots are not easy to chew and digest; and in the winter the giant panda subsists mainly on the hard mature stalks of bamboo. Consequently, it is not suprising that every aspect of the giant panda's anatomy associated with chewing shows re-

A sixth digit or pseudo-thumb (far right digit on drawing) is a unique feature of the specialized forepaws that enable pandas to pick up and hold objects with surprising precision. The extra "finger" is really an elongated wristbone covered with a tough, fleshy pad.

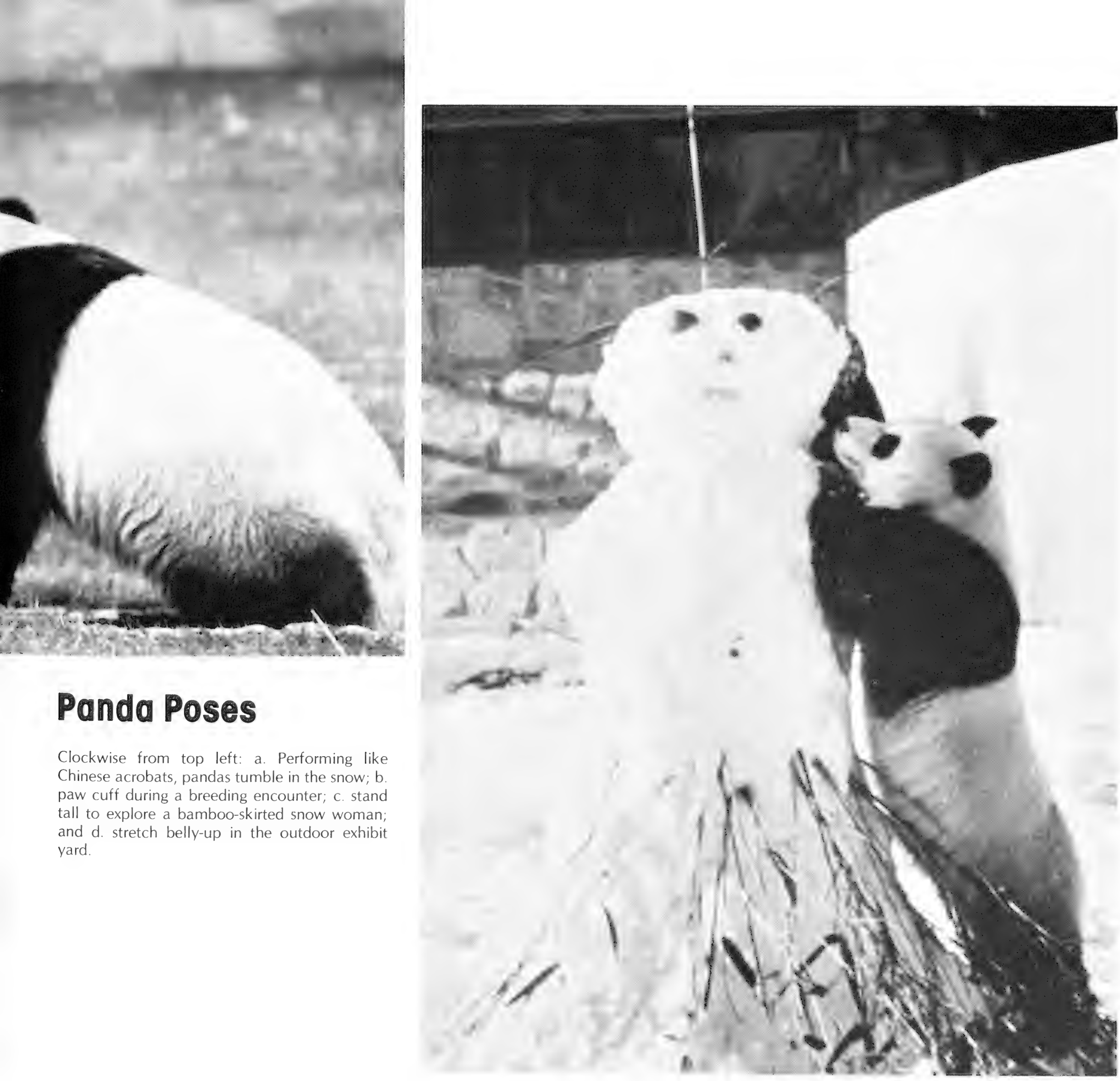


markable development. It has huge molars and cheek teeth as well as powerful chewing muscles. The digestive system also shows interesting adaptations for this diet. The stomach is thick-walled and very muscular. The small intestine, which is usually comparatively long in herbivorous mammals, is abbreviated. Overall, the giant panda's intestines are short even in comparison to those of most of its strictly carnivorous relatives. Evidently the giant panda's food is so difficult to digest that, after being ground up as much as possible in the stomach, it is passed quickly through the short intestine to the long intestine where it can be acted on by internal bacteria and protozoa. Even so, the giant panda is not able to absorb anywhere near all of the bamboo's potential nourishment so its droppings are characterized by large amounts of undigested matter. To compensate both for the relatively low nutritional value of its food to begin with and for the inefficiency of its own digestive system, one observer has estimated that a giant panda in the wild must spend 10 to 12 hours a day feeding. If that is so, it would seem that they do little else; but then they have little else to do. They have no real social life outside of a brief annual mating season. Perhaps significantly, captive pandas seem to lose most interest in food during mating season.

How much of the giant panda's diet in the wild is made up of foods other than bamboo is a question that has still not been answered. Analysis of wild panda droppings has shown occasional traces of small mammals and birds. It is certainly untrue—although it has often been said—that their diet consists exclusively of bamboo. Crocuses, irises, and grasses have also been reported as occasional food items, and sometimes a panda will invade a cultivated field of corn. Bamboo is unavailable in Moscow, but the Moscow Zoo's long-lived male panda, An-An, successfully adjusted to a diet of birch twigs. The panda's sweet-tooth is well attested in the wild. Early travelers reported that pandas frequently raided the beehives of farmers. When keepers at the National Zoo have to entice one of the pandas out of its den, they use honey as bait.

Typically, pandas break off the bamboo into small stalks, then strip off the tough outer layers before grasping and eating the peeled meal. The stalk-holding technique is similar to how humans would grasp if wearing "thumbless mittens."

Giant pandas are good, if methodical, climbers. Pandas often climb to the tops of tall conifers and other trees of their native habitat to rest during the daytime or, according to the natives, "to sun themselves." They hoist themselves up by hugging the trunk in bearlike fashion. They climb down tail first as bears do, but they may walk down a more horizontal branch in a head-first manner reminiscent of the lesser panda.



Panda Poses

Clockwise from top left: a. Performing like Chinese acrobats, pandas tumble in the snow; b. paw cuff during a breeding encounter; c. stand tall to explore a bamboo-skirted snow woman; and d. stretch belly-up in the outdoor exhibit yard.

Although contradicted by some western observers, Chinese experts say that pandas love water. Chen Ho-yi, assistant at the Institute of Zoology, Chinese Academy of Sciences, reported that pandas "sometimes continue drinking until they are so full that they can only waddle. One giant panda actually lost consciousness through over drinking; it was found by members of a production team who stood guard till it came to and was able to go safely on its way."

Little is known of the giant panda's reproductive biology in the wild. According to early accounts, there is an annual mating season in April. Males were reported to fight among themselves, and establish rights to a female by "roaring" persistently while the female watched nearby. No one knows the real truth. We do know that captive females come into heat in the spring for a period of 10 days to 3 weeks, which coincides with rut in the male. Captive specimens also have a briefer and less intense autumnal heat period. Chinese zoologists say that the fall breeding season occurs in the wild in females that have not become pregnant that previous spring. As for the "roaring," captive specimens of both sexes have been heard making a variety of barking and bleating noises during mating season.

Females, after successful mating and a gestation period of 118 to 168 days, usually give birth to a single cub, although two or even three are sometimes born. The mother sometimes carries her infant with her as she travels in search of food, holding it up to her breast with one forepaw. Sometimes, too, especially as the infant gets older, she may leave it behind in a hollow tree when she is feeding.

Weighing only 5 or 6 ounces at birth (little more than a stick of butter!), a young panda grows rapidly, increasing twenty-five or thirty fold in weight during the first ten weeks. After ten months its weight has doubled seven times to a hefty sixty pounds. They have lived more than 20 years in captivity.

Pandas have few, if any, enemies except man. If the animal senses danger, it retreats along its own trail or climbs a tree. Sinced 1949, strict laws have protected them. Experts consider the giant panda rare but not in danger of extinction. Total population in the wild has been estimated from several hundred to several thousand. Fortunately, the Chinese have set aside several preserves to safeguard the panda's future.

Thus, though the species can still be considered uncommon, its population is now stable and not in danger of extinction. The giant panda endures as a reminder of the precarious state of all wildlife, dependent on man's forebearance for survival.

Austin Hughes

Hsing-Hsing aggressively cuffs and tries to unseat Ling-Ling from her log platform in the outdoor yard. Interplay like this is normal during spring and fall mating encounters.

Pandas and Man

Man of science as well as God, Pere David "discovered" the giant panda during his overseas missionary work. Stationed in China from 1862 to 1874, Père David completed three important collecting trips for the Museum of Natural History of Paris. He sent back to Europe a vast collection of "new" plants as well as 58 birds and about 100 insects and mammals new to western science; they included the milou, now known as Pere David's deer, and the spectacular snub-nosed Roxellana monkey. After obtaining several specimens of the giant panda, which he misleadingly classified as "black-and-white bear," he described his discovery in a March 21, 1869 letter to the Paris Natural History Museum: ". . . I have never before seen this species which is easily the prettiest kind of animal I know. . . ."

The giant panda was unknown to Western science until 1869. It was "discovered" by Abbé Armand David, the famous French missionary and naturalist who was responsible for the first scientific accounts of many other Chinese birds and mammals, including the rare deer that bears his name. Père David's diary does not make clear whether, in setting out for the remote western mountains of China's Szechuan Province, he was drawn primarily by rumors of the giant panda. But he does seem to have been familiar with the term "beishung" (pronounced "bye-shung") or "white bear," which appears in Chinese literature as early as 621 A.D. and is assumed to refer to the giant panda. In any event, when he reached the giant panda's native country, Père David noted cryptically in his diary that he planned to "spend a year in Muping, the promised land where everyone has said there are wonders."

Soon thereafter, on an expedition around Muping, he described the historic discovery in his diary for March 11, 1869:

> On returning from our excursion, we were invited to rest at the home of a certain Li, the

Previous page: Discovered by Western science only a century ago and still rare in captivity, the giant panda has captured the curiosity and love of explorers, scientists, and millions of zoogoers. Dr. Theodore H. Reed, Director of the National Zoo, and his wife, welcome Ling-Ling with American-grown bamboo.

> principal landowner in the valley . . . (there) I see a fine skin of the famous white and black bear which appears to be fairly large. It is a very remarkable species . . . it must constitute an interesting novelty for science.

Within ten days he had obtained two specimens. He sent the pelts and skeletons to France together with a preliminary description of the species and caused the anticipated stir in European scientific circles.

For nearly 50 years after Pere David's discovery, no Westerner laid eyes on a living giant panda, although native hunters were paid well for dead ones and provided a small but steady supply of specimens for European and American museums. Meanwhile, its rarity made the giant panda one of the world's most sought after "big-game" trophies.

In 1916, a German zoologist, Hugo Weigold, actually held the first living panda. He obtained a baby from local inhabitants, but despite hand-rearing, the cub died in a few days.

In 1929, Colonel Theodore and Kermit Roosevelt, sons of President Theodore Roosevelt, became the first westerners to hold the dubious distinction of shooting a giant panda. The expedition to obtain a specimen was sponsored by the Field Museum in Chicago. More museum hunters—and more deaths—followed.

Then in 1934, William H. Harkness, Jr., the "bring 'em back alive" captor of several Komodo dragons for the Bronx Zoo, left New York and his bride of two weeks determined to return with a live panda. But his ill-fated expedition collapsed on reaching China, and Harkness died of a mysterious illness in Shanghai.

His wife, Ruth, independent and determined though without any experience whatever with animals or expeditions, quickly set out to do what her husband did not. After long and harrowing travels, her expedition reached panda land in November, 1936. Two weeks later, the prize that had alluded explorers and collectors for decades belonged to Ruth Harkness. She wrote:

> We plowed on a little further through the dripping bamboo which gradually gave way to a few big trees. Quentin stopped suddenly. He listened for a moment and then went forward so rapidly that I couldn't keep up with him. Dimly I saw him through the wet, waving branches standing near a large rotting tree. I followed as best I could, brushing the water from my face and eyes. Then I, too, stopped—frozen in my tracks. From the old dead trunk of the tree came a baby's whimper. Quentin reached into the hollow trunk of the tree. Then he turned and walked toward me. In his arms was a baby panda.

Jubilantly holding the kitten-sized cub in her arms for the first time, Mrs. Harkness recalled, "That little black-and-white ball nuzzled my jacket, and suddenly with the sureness of age-old instinct, went straight to my breast."

No more than ten days old, the cub weighed less than three pounds. She named it Su-Lin, "a little bit of something very cute."

To ensure the cub's health, the Chinese porters staged a sacrificial ceremony that night. They stabbed a rooster three times in the neck, burned paper money, poured wine on the ground, and set off firecrackers. Understandably excited, Mrs. Harkness put her own finishing touches on the ceremony by firing her revolver three times in the air.

When Chinese red tape delayed the departure of the first panda to the West, a newspaper editor introduced the classic panda pun: "Panda-monium in Shanghai Customs House."

Finally, Mrs. Harkness and Su-Lin, were permitted to sail away on the *President McKinley*. The official animal passage voucher stated "One Dog, $20."

On December 18, 1936, Su-Lin arrived in San Francisco to a tumultuous welcome. The panda epoch had begun.

As one chronicler put it, "The final consensus of the press was that not since Bernard Shaw had a foreign celebrity received such a reception as Su-Lin."

Even Colonel Roosevelt, who had shot the first panda for museum display, said of Su-Lin, "I'd as soon think of mounting my own son as I would this baby."

Before Su-Lin was sold to Chicago's Brookfield Zoo, he traveled to several cities, including Washington.

Lucille Mann, wife of the late William M. Mann, who was Director of the National Zoological Park from 1925 to 1956, recalls:

> I still have a vivid recollection of Mrs. Harkness and the panda coming to see us one evening in our apartment on Adams Mill Road. The baby was quite small then, not more than ten or fifteen pounds, I think; and Mrs. Harkness held it in her arms all evening. She was still feeding it from a nursing bottle. I suppose she had already offered it to the Bronx Zoo, and was on her way to Chicago. Su-Lin was the first live panda Dr. Mann and I had ever seen, and of course it was a lovely cuddly little animal. We would have loved keeping it in Washington, but the astronomical price was far beyond the National Zoo's modest budget.

As exciting as was the arrival of Hsing-Hsing and Ling-Ling in 1972, it is difficult to imagine the far greater sensation Su-Lin caused only thirty-five years ago. Not only was he of interest because he was the first of a rare, almost legendary species to reach America, but he was an appealing infant. Nowadays panda toys are familiar to every child; but Su-Lin was the direct inspiration for the first ones. And before he appeared, his "adorable" species was usually depicted as ferocious and dangerous.

Soon, pandas appeared on postage stamps, wallpaper, nursery furniture, and cigarette packs. Pandas smiled black-eyed from the fronts of girls' swimming suits and cavorted clumsily in countless cartoons. There was even a panda cocktail: equal parts of plum brandy, apple brandy, orange juice, and gin.

Sparked by nine more live pandas exhibited at zoos in New York, Chicago, and St. Louis until 1953, the panda craze became permanent.

Significantly, the giant panda today serves as the symbol of the World Wildlife Fund's efforts to save endangered species.

Sabin Robbins
Executive Director, FONZ

A spirited American adventuress, Ruth Harkness (left) was the first person to bring a live panda out of China. Captured as a cub in 1936, Su-Lin ("a little bit of something very cute") was exhibited at Chicago's Brookfield Zoo and inspired the "panda-monium" that continues to the present.

Zoogoers to the Peking Zoo can see several of the some 20 giant pandas that are exhibited and successfully bred in Chinese zoos. Only a few are in western zoos.

Dear Mr. Zoo Keeper,
I think that
Hsing-Hsing and Ling-Ling
are the best Panda's in the
whole world. Today, October 26, '75
we came to the zoo in Washington
because we wanted to see the
Panda Bears. Pandas, Dogs and
Otters are my favorite animals.
When we went to see the
Panda gift shop, I asked if
I could have the whole store!
Mr Zoo Keeper, I loved your
zoo!

Sincerly
Your
Panda fan,
Debbie
Broder.

Lesser Pandas

The first scientific description of the lesser panda was published in 1825, over forty years before the giant panda was discovered. In fact, the very name "panda" is derived from a Nepalese expression for the smaller species and was not applied to the giant panda until 1901. The lesser panda's earlier discovery is not surprising since it is found over a much wider range than its relative. While sharing the giant panda's habitat in central China, the lesser panda is also found throughout the foothills of the Himalayas in India and Nepal and as far east as Burma and Laos. In those regions where the two species' ranges overlap, the lesser panda is found higher in the mountains and lower in the valleys than the giant panda.

The lesser panda's discovery aroused considerable interest in Europe. Scientists heatedly debated its position in the animal kingdom. Some pointed out the species' raccoon-like traits, but others hesitated to place it in the raccoon family because no member of this family had been found in the Old World. Aside from its zoological interest, the lesser panda received some popular attention when it was hailed as "the most beautiful of mammals." Certainly it is an attractive animal, with bright russet body, white face, black legs, and ringed tail.

Previous page: Always inquisitive and climbing trees, the lesser or red panda is the only close relative of the giant panda.

Face like a fox and a tail like a raccoon, the russet-furred lesser panda shares the giant panda's home in China. It also inhabits India, Nepal, Burma, and Laos.

Since the discovery of the giant panda, most scientists have agreed that the lesser panda and the giant panda are more closely related to one another than either is to any other living species. Much of the evidence for their relationship involves anatomical structures not readily observable. But there are similarities obvious to any observer.

A lesser panda, for instance, walks very much like a giant panda. In both, the head is lowered while the animal is walking, and the body sways from side to side. Bears, on the other hand, tend to keep the head and body steady. Both pandas walk on the entire soles of the front feet but only on the toes of the rear feet. Bears, in contrast, walk on the soles of all four feet.

The paws of the two panda species show interesting similarities. Both, for instance, have semi-retractable claws unlike any members of either the bear or raccoon family. The giant panda has an elongated wrist bone that functions almost like a thumb in grasping bamboo. The lesser panda has a similar, but less developed, elongation of its wrist bone. This is, perhaps, to be expected; the lesser panda eats some bamboo but not as much as its larger relative. In one way the lesser panda's feet differ from those of the giant panda—the soles are covered with fur. In this, the lesser panda is unique among non-Arctic mammals.

Little is known of the lesser panda's life in the wild. Certainly, the lesser panda is less of a specialist in habitat and diet than the giant panda. Its diet includes a wide variety of grasses, roots, fruits, and nuts. It sometimes steals birds' eggs and, probably,

Favorite haunt of the National Zoo's colony of lesser pandas are the tree hollows in their outdoor enclosures.

like the giant panda, occasionally captures small animals.

Lesser pandas have bred fairly frequently in captivity. The National Zoo's success at breeding lesser pandas dates back to the middle 1960's, but it was not until the last four years that females began successfully raising their young to maturity to maintain sustained breeding.

Much of this success can be attributed to knowledge acquired over the years in their behavior prior to and after parturition. Observations show that the female needs a number of nesting areas in order to move the cubs, which she does quite frequently in the early stages of the cubs' development. Quiet and seclusion also appear to be very important.

Mating takes place in February; and the young, usually two in number, are born at the end of June or the beginning of July. The female cares for them without help from the male. Like the giant panda, she tends to hide them in a hollow tree, returning periodically to nurse them. The infant's fur at birth is a uniform tannish white. They are quite helpless, with their eyes closed for the first two weeks of life.

Austin Hughes &
William Xanten
Associate Curator, Mammals

Expert care and study by zoo curators as well as a variety of different nest boxes have enabled the National Zoo to become one of the world's most successful breeders of the rare lesser panda.

Attentive mother and ring-tailed cub are a common sight at the National Zoo.

BOOKNEWS

The World of the Giant Panda*

Richard Perry, Taplinger, $7.95, 136 pages.

Men and Pandas

Ramona & Desmond Morris, McGraw-Hill, $7.95, 273 pages.

Hsing-Hsing and Ling-Ling: Year of the Panda*

Larry R. Collins & James K. Page, Jr., Anchor Press, $6.95, 164 pages.

The Giant Panda Book*

Anthony Hiss. Pictures by Greg & Tim Hildebrandt, Golden Press, $3.95, 45 pages.

A Book about Pandas*

Ruth Belov Gross, Scholastic Book Services, 95¢, 30 pages.

*Available at the FONZ ZooShop.

The giant panda is one of the best loved—and least known—animals. Meager are the bits of information gathered by the few hunters and travellers who have penetrated the panda's forbidding homeland. Zoo pandas have provided some additional data; but, since no captive breeding has taken place outside China, there remain wide gaps. Thus, writers of popular books about the species are confronted with a unique dilemma: their subject arouses great curiosity, yet there are few "facts" to report.

The World of the Giant Panda by the well-known nature writer, Richard Perry, includes most of what is known about the species' natural history. Though the author writes well and has made a valiant effort to produce a full-length book, the stretch-marks are obvious. Perry tends to fill in the gaps with speculation and "impressionistic" descriptions of a landscape he has never seen.

Men and Pandas by Ramona and Desmond Morris, concentrates as much on the human beings associated with the giant panda as on the species' natural history. There are plenty of good stories in the exploits of the early panda hunters and trappers, as well as in the enthusiastic public response that has greeted each captive giant panda.

Desmond Morris was curator of mammals for the London Zoological Society during the lifetime of England's most long-lived panda, the female, Chi-Chi. He is thus able to describe Chi-Chi's life in intimate detail, including her much-publicized visit to Moscow to meet the male panda, An-An.

In *Hsing-Hsing and Ling-Ling: Year of the Panda,* Larry R. Collins who was in charge of the National Zoo's Panda Unit the first year and James K. Page, Jr., of the *Smithsonian* magazine detail that epochal year in the history of man's relations with the giant panda. It is written in a low-key humorous style and provides a great deal of new information found in no other book. In addition, there are few other books that present so revealing a picture of day-to-day life at a large zoo.

To round out our survey of panda literature, two children's books should be mentioned. *The Giant Panda Book,* illustrated with excellent colored drawings, covers the species' natural history, the story of Chi-Chi, and the story of Hsing-Hsing and Ling-Ling. It is entertainingly written and should delight any young reader aged 9-12. *A Book About Pandas* is better suited for still young readers. Occasionally, however, it presupposes knowledge very young readers would not likely have. In addition, the book is marred by annoying inaccuracies and by a layout of black and white photographs and blue ink that is dreary.

Austin Hughes

The lesser panda—only relative of the giant panda—is a fitting and charming subject both for this special issue on pandas and a star of the 1975 series of six special Zoo prints. The other outstanding wildlife portraits drawn by the Zoo's official artist, Warren A. Cutler, that have appeared in past *ZooGoer* issues are the giant panda, jaguar, snowy owl, colobus monkey, and white tiger. Each 18"x24" drawing is produced on the finest paper, numbered, and signed personally by the artist. Prepared exclusively for FONZ members, the limited edition set for $60 or individual drawings for $10 are only available by contacting FONZ at 232-7700.